

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number  
**WO 2005/074379 A2**

(51) International Patent Classification: Not classified

(21) International Application Number:  
PCT/IL2005/000158

(22) International Filing Date: 9 February 2005 (09.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
160308 10 February 2004 (10.02.2004) IL

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(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,

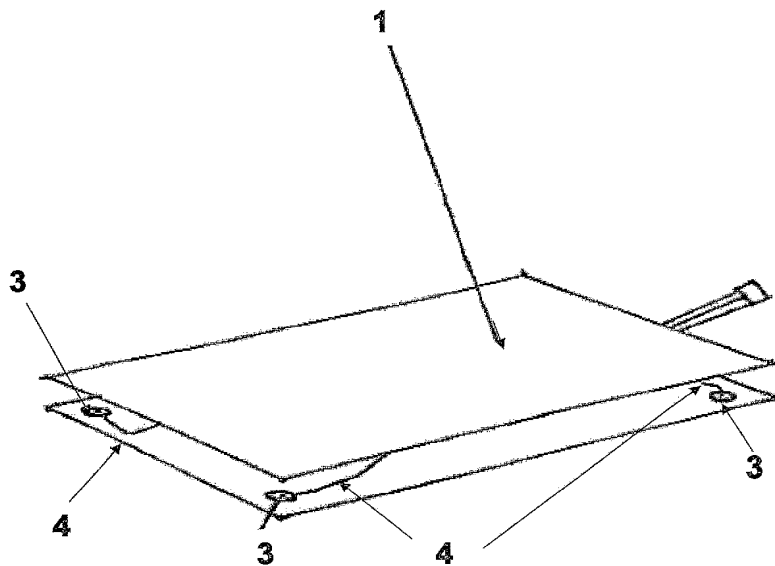
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CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**  
— without international search report and to be republished  
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR DETECTING HEART BEAT AND DETERMINING HEART AND RESPIRATION RATE



(57) **Abstract:** Disclosed is an apparatus and system for non-invasively detecting and determining the heart rate and respiration rate of a patient, while the patient is within their sleep environment, suitable for both home and hospital monitoring, which includes an array of at least two pressure-sensitive sensors, positioned under the mattress, which gathers data from the patient corresponding to the vertical and horizontal movements of the body, and wherein the data from each sensor is collected, filtered, and analyzed and finally, the difference between the results gathered from each sensor detects and determines heart and respiration rates.

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